UNITED STATES PATENT AND TRADEMARK OFFICE

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09/538,380	03/29/2000	Jennie Ching	1503P/BC999068	6677

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EXAMINER
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ART UNIT	PAPER NUMBER
2127	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *March 29, 2000* .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-21* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claims 12, 14-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12, 14, 16, 17, and 19 recites the limitation "the system" in line 1 of each claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the subsystem control thread" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the watchdog worker thread" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 recites the limitation "the subsystem control thread" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the watchdog worker thread" in lines 1-2. There is

insufficient antecedent basis for this limitation in the claim

Claim 20 recites the limitation "the program instructions" in line 2-3. There is

insufficient antecedent basis for this limitation in the claim

Claim 21 recites the limitation "program instructions" in line 1. There is insufficient

antecedent basis for this limitation in the claim.

For the purposes of treating the above claims on their merits, it is assumed that claim 12

is meant to depend from claim 11, and claims 14, 16, 17, and 19 depend therefrom. Further, it is

assumed that claim 21 is meant to depend from claim 20.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1-2, 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharma et

al. (USPN 5,809,235) (hereinafter Sharma).

As per claim 1, Sharma discloses a method for managing subsystem processes from a central site in a digital media distributor system, the method comprising:

utilizing a plurality of threads as a task manager in a central site server of the digital media distributor (col. 21 line 39 – col. 22 line 38, "Server threads are created and managed in a server thread pool"); and

autonomously controlling initiation and termination of one or more subsystem processes with the task manager (col. 21 line 39 – col. 22 line 38, "The server management thread is responsible for management of the server thread pool by coordinating the creation or deletion of server threads in the thread pool").

As per claim 2, Sharma discloses the method of claim 1 wherein utilizing a plurality of threads further comprises utilizing a main manager thread (col. 21 line 39 – col. 22 line 38, "When the server is first started up, a server management thread is created", wherein the server management thread is responsible for managing the thread pool).

As per claim 11, it is rejected for similar reasons as stated for claim 1. Further, Sharma is applied to network event management, and it is inherent in a networked environment to have a central server with remote sites and a distribution network for routing of data across the network.

As per claim 12, it is rejected for similar reasons as stated for claim 2.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma

in view of Dangelo et al. (USPN 5,907,494) (hereinafter Dangelo).

As per claim 3, Sharma does not specifically disclose the method of claim 2 wherein

utilizing a plurality of threads further comprises utilizing a subsystem control thread as a child

thread of the main manager thread.

Dangelo discloses utilizing a subsystem control thread as a child thread of the main

manager thread (col. 6 lines 24-34, "the virtual machine 55 enables peer point tools to coordinate

their activities or to spawn new 'child' activities via interprocess control threads", wherein

Dangelo discloses the ability to create child threads in an effort to control the execution of

processes on the system).

It would have been obvious to one of ordinary skill in the art to combine Sharma with

Dangelo since by allowing the execution of processes to be maintained by control threads rather

than by the main manager thread, each type of thread can have a more specialized function. That

is, the main manager thread is responsible for only maintaining the integrity of the operating

system, while the child threads manage memory allocation, execution of system tasks, etc.

Additionally, the idea presented by Dangelo of spawning "child" threads to manage subtasks of

the system is well established in the art, and explained in detail by Dangelo. For the remainder

of the discussion in this Office Action, the spawning disclosed within Dangelo suggests the use

of that idea for management of other subtasks.

As per claim 13, it is rejected for similar reasons as stated for claim 3.

7.   Claims 4-6, 8-9, 14-16, 18-19, and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sharma in view of Dangelo as applied to claims 1-3 above, and further in view

of Guedalia et al. (USPN 6,535,878) (hereinafter Guedalia).

As per claim 4, the modified Sharma does not specifically disclose the method of claim 3

wherein utilizing a plurality of threads further comprises utilizing a watchdog worker thread as a

child thread of the subsystem control thread.

Guedalia discloses utilizing a watchdog worker thread as a child thread of the subsystem

control thread (col. 10 lines 12-44, "a special 'watchdog' thread is used to monitor the threads",

wherein the watchdog manages creation and deletion of threads that ultimately perform all

processes of the system).

It would have been obvious to one of ordinary skill in the art to combine the modified

Sharma with Guedalia since the use of a watchdog thread to manage all the threads of execution

would allow further subdivision of functions of the system. Thus, the lower levels of child

threads have more specialized functions and overall management of the system is made easier, as

discussed regarding claim 3.

As per claim 5, Guedalia discloses the method of claim 4 wherein utilizing a plurality of threads further comprises utilizing a spawn worker thread as a child thread of the watchdog worker thread (col. 10 lines 12-44, "the 'watchdog' manages thread creation", wherein the watchdog thread spawns a new thread in response to a work request and the spawn worker thread is allocated from the thread pool).

As per claim 6, Sharma discloses the method of claim 5 further comprising utilizing one watchdog worker thread and one spawn worker thread for each subsystem process (col. 21 line 39 – col. 22 line 38, "there is a one to one correspondence between a TAccess Definition Object with each client_port assigned on the server side", wherein a server thread is allocated from the thread pool for each work request).

It is noted that Sharma does not include watchdog threads for the management of each subsystem process. However, as discussed regarding claims 4 and 5, Guedalia teaches that a watchdog thread manages all of the thread creation of the system. This suggests that each subsystem process would then have one watchdog worker thread overseeing its execution, as claimed.

As per claim 8, Guedalia discloses the method of claim 6 further comprising utilizing the watchdog worker thread to start each subsystem process through the spawn worker thread and to monitor performance of each subsystem process (col. 10 lines 12-44, "a special 'watchdog' thread is used to monitor the threads", "the 'watchdog' manages thread creation", wherein the

watchdog thread is solely responsible for creation and deletion of threads and also monitors their execution in order to update their status).

As per claim 9, Guedalia discloses the method of claim 8 wherein utilizing the spawn worker thread further comprises spawning each subsystem process and waiting for termination of each spawned subsystem process (col. 10 lines 12-44, "the 'watchdog' thread manages thread creation", "The old thread that was removed from the thread pool completes its task and dies", wherein the watchdog thread creates a thread of execution and removes it from the thread pool upon its completion of its task).

As per claims 14-16, 18-19, they are rejected for similar reasons as stated for claim 4-6, 8-9 above, respectively.

As per claim 21, Dangelo and Guedalia disclose the program instructions of claim 19 wherein providing a task manager further comprises utilizing a control thread and worker threads for managing the subsystem processes. This is discussed above, as Dangelo discloses the use of control threads, as discussed regarding claim 3, and Guedalia teaches watchdog worker threads, as discussed regarding claim 4.

8.   Claims 7, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma in view of Dangelo as applied to claims 1-3 above, and further in view of Flenley et al. (USPN 6,405,317) (hereinafter Flenley).

As per claim 7, the modified Sharma does not specifically disclose the method of claim 3

further comprising utilizing the subsystem control thread to determine need for initiation of a

subsystem process.

Flenley discloses utilizing the subsystem control thread to determine need for initiation of

a subsystem process (col. 4 lines 11 –32, "Each instantiation spawns its own control thread that

is responsible for monitoring its own private queue….if there is a request pending execution and

it is time to attempt to process pending requests again, the SPM objects spawns an execution

thread that handles the execution of that single request", wherein the control thread disclosed by

Flenley spawns an execution thread in response to a need to service a particular request).

It would have been obvious to one of ordinary skill in the art to combine the modified

Sharma with Flenley since by making the control thread determine when an execution thread

needs to be created, the system further breaks down tasks into smaller, more manageable tasks.

The control thread thereby allocates an execution thread (similar to the thread pool discussed

above) to handle any service requests, thereby creating a set of thread types, each with a very

specific function, to modularize the functionality of the system, and thereby make it more

manageable and customizable.

As per claim 17 it is rejected for similar reasons as stated for claim 7 above.

9.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma in view

of Wang (USPN 5,758,645).

As per claim 10, Sharma does not specifically disclose the method of claim 1 wherein controlling one or more subsystem processes further comprises controlling a subsystem process from the group comprising a scheduler process, a stage manager process, a local insertion system proxy process, an error document check process, a response document processor process, a disk pool manager process, a request generator process, As-Run manager processes, an update network break time process, and a network local broadcast process.

Wang discloses controlling subsystem processes from the group comprising a scheduler process, a stage manager process, a local insertion system proxy process, an error document check process, a response document processor process, a disk pool manager process, a request generator process, As-Run manager processes, an update network break time process, and a network local broadcast process (col. 3 line 57 – col. 4 line 10, "This layer is over the IBM Parallel System Support Programs [PSSP] layer", "The PSSP layer 28 is over the AIX operating system layer", wherein Applicant discloses on pg. 8 that the claimed subsystem processes are part of the operating system of Fig. 2 element 34, and the Figure clarifies the operating system as being a combination of AIX and PSSP).

It would have been obvious to one of ordinary skill in the art to combine Sharma with Wang since the processes being executed must be a set of processes an operating system requests service for. The PSSP and AIX definitions incorporated into Wang show that these are two operating systems that commonly are used together, thus a need exists for a system that treats the processes of these systems.

10.   Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharma.

As per claim 20, Sharma discloses a computer readable medium containing program instruction for managing subsystem processes from a central site in a digital media distributor (DMD) system, the program instructions comprising:

providing a task manager as a main program thread of an operating system of a central site server of the DMD system col. 21 line 39 – col. 22 line 38, "When the server is first started up, a server management thread is created", wherein the server management thread is responsible for managing the thread pool); and

Sharma does not specifically disclose managing subsystem processes from start-up to shut down, including states of online, offline, process inoperable, deadlock inoperable, and spawn inoperable, with the task manager to dynamically manage the DMD system.

"Official Notice" is taken that the above states of a server are well known possible statuses of a server at any given time. Further, there are many methods of troubleshooting such a server. Sharma discloses a way of automating the activities of a server based on a main managing thread, and it would easily fall within the scope of Sharma to state that certain states of operation of a thread are watched over by the task manager.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Syed J Ali whose telephone number is (703) 305-8106. The

examiner can normally be reached on Mon-Fri 8-5:30, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John A Follansbee can be reached on (703) 305-8498. The fax phone numbers for

the organization where this application or proceeding is assigned are (703) 746-7239 for regular

communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Syed Ali
April 24, 2003

MAJID BANANKHAH
PRIMARY EXAMINER